

THREE NEW CHORIPETALAE FROM NORTH AMERICA  
AND MEXICO.

✓ **Silene rectiramea.** — Cespitose perennial, 2 to 3<sup>dm</sup> high: stems several from a multicapital caudex, covered at the base by the pale scarious persistent scale-like ciliated bases of the earliest leaves, terete or elliptic in section, slightly striate in a dried state, pubescent and more or less viscid especially above, sometimes simple to the inflorescence, sometimes branched from every node; lower internodes relatively short, often curved, the middle and upper elongated, 6 to 8<sup>cm</sup> long, much exceeding the leaves, remarkably straight; branches solitary or opposite at the nodes, diverging from the stem at a uniform angle of about 45°; their internodes also elongated and very straight: leaves of the stem about five pairs; the lower ones, like the radical, oblanceolate, 2.4 to 4<sup>cm</sup> long, 4 to 7<sup>mm</sup> broad, the middle and upper lance-oblong to linear, all acute, 1-nerved, obscurely pinnate-veined, minutely papillose and pulverulent-puberulent under a strong lens: bracts lance-linear, often purplish, 7 to 9<sup>mm</sup> long; bractlets similar, 2<sup>mm</sup> long: flowers terminal on the divergent branches of and open flat-topped cyme, or in weaker stems reduced to a terminal and one or two short-pedicelled lateral ones; calyx cylindric in anthesis, white and papery but veined with light purple, 9<sup>mm</sup> long, 10-nerved; the nerves opposite the teeth branching freely, intermediate ones subsimple; teeth orbicular with incurved margins: gynophore in anthesis 1.7, in fruit 2.5<sup>mm</sup> long: petals 1 to 1.1<sup>cm</sup> long, glabrous except externally at the very base; claws plicate, subauriculate at the summit, 3-veined; blade short, 2 to 3<sup>mm</sup> long, bifid a fourth of its length: stamens 10, equal: carpels 3; capsule ovoid, 7<sup>mm</sup> long, at maturity 1-celled to the very base: seeds reddish-brown, tubercles in few concentric series, those of the dorsal region enlarged and forming a more or less definite crest.

Collected by Professor D. T. MacDougal about the Grand Cañon of the Colorado in Arizona, altitude 2150<sup>m</sup>, 28 June, 1898, no. 181. Type in herb. Gray.

This species stands near *S. verecunda* Watson, but differs in its elongated very straight branches and delicate papery calyx, which, although narrowly cylindric to obovoid, shows no indication of the tightening or constriction about the carpophore which is to be noticed in *S. verecunda*. Specimens of *S. rectiramea* were distributed in Mr. MacDougal's interesting Arizona sets but were determined only to the genus. Mr. A. A. Heller, who has had charge of the identification of the sets, has courteously waived in favor of author his right to characterize this species.



**Arabis Crandallii.** — Cespitose perennial, 3<sup>dm</sup> high, pale green and hoary puberulent throughout, with minute stellate interplexed hairs: stems numerous (20 or more), slender, terete, from a loosely multipital caudex: root single, vertical: radical leaves oblanceolate-spatulate, 1.5 to 1.8<sup>cm</sup> long, 3 to 4<sup>mm</sup> broad, entire, acutish, cuneate-attenuate at the base, concolorous, minutely stellate-tomentulose on both surfaces, 1-nerved; the cauline (about 8 on each stem) similar but shorter and more oblong, sessile by a subamplexicaul base: pedicels ascending or appressed, 5 to 6<sup>mm</sup> long, slightly enlarged at the summit: sepals oblong, obtuse, stellate-puberulent, often purplish-tinged, 3<sup>mm</sup> long: petals obovate, cuneate, white, roseate-tinged, twice as long as the calyx: pods erect, slender, subtorulose in dried specimens, 2.5 to 4<sup>mm</sup> long, 1<sup>mm</sup> broad, flattened; seeds (immature) uniseriate in each cell and nearly or quite as broad as the septum.

Collected by Professor C. S. Crandall at Cimarron, Montrose co., Colorado, attitude 2100<sup>m</sup>, 18 May, 1898, no. 6. Type in herb. Gray.

In habit this species most nearly approaches the Canadian *A. Macounii* Wats., from which, however, it is clearly distinguished by its fine stellate pubescence, shorter erect pods, and larger leaves.

**Mimosa acapulcensis** (Subg. *Eumimosa* Ser. *Sensitiva*). — Shrub 1.5 to 3<sup>m</sup> high: branches terete, subflexuous, covered with a yellowish-gray striate cortex and armed with scattered, firm, grayish-brown, laterally compressed, slightly recurved spines: leaves unjugate and pinnæ 3-foliolate in the manner of *M. sensitiva* (a diminutive fourth leaflet occasionally present); leaflets glabrous, glaucous, coriaceous, oblong, entire, cartilaginous-margined, acute to rounded at the apex, subcordate and very oblique at the base, oblong, 3 to 10<sup>cm</sup> long, nearly half as broad; common petioles slender, wiry, 3 to 8<sup>cm</sup> long; secondary rhachises 2 to 3.5<sup>cm</sup> long: peduncles slender, ascending, fascicled by 3's, 4's, and 5's along the terminal portion of the branch, and forming a loose, elongated, relatively narrow inflorescence, leafy towards the base: heads globose, 1.5<sup>cm</sup> in diameter (incl. the long stamens), roseate; flowers perfect and staminate: calyx campanulate, less than 1<sup>mm</sup> long, cuspidate-denticulate: corolla 2.7<sup>mm</sup> long, glabrous, 3-4-nerved and 3-4-toothed; teeth ovate-deltoid, a third as long as the tube: pods 2.5 to 4<sup>mm</sup> long, glabrous and wholly unarmed both as to valves and replum, long-stiped, torose, acuminate at the tip, 3-4-jointed, Indian-brown at maturity; valves falling away in segments.



Common on hills near Acapulco, Mexico, where collected by Dr. Edward Palmer between October 1894 and March 1895, no. 296.

I am indebted to Dr. Rose for calling my attention to this species, Dr. Palmer's specimen having been undistributed in the Gray Herbarium at the time of my recent revision of the genus. Types in herb. Gray and herb. U. S. National Museum. — B. L. ROBINSON.

### THE PROBABLE CAUSES OF THE POISONOUS EFFECTS OF THE DARNEL (*LOLIUM TEMULENTUM* L.).

THE presence of a poisonous principle in the darnel has been well known since the earliest investigations of the subject, and recent experiments confirm this fact. According to Hofmeister,<sup>1</sup> the darnel contains two active principles: *temulin*, obtained by this author as chloroplatinate, which acts upon the nervous system; and the other, determined by the oily substances and fatty acids which are contained in the seed in large proportion, which attacks the alimentary canal.

In the course of our researches upon the seed integuments and the pericarp of grasses, we have had occasion to note the practically constant presence in the seeds of the darnel of a fungus to which it seemed reasonable to us to assign the poisonous effects. This fungus, which is always present in the form of mycelial filaments, appears at an early stage in the interior of the ovary. In the first stages of its development it invades the entire nucellus. At the time that the external integument of the ovule disappears, the nucellus itself is almost entirely resorbed, with the exception of two or three of the outermost layers which, obliterated in the maturing of the grain, constitute the hyaline layer. Crowded out by the development of endosperm after fertilization, the mycelium becomes restricted between this hyaline layer and the outermost endosperm. It is in this zone that we have observed it in the mature seed. After the removal of the diverse coatings of the fruit, the hyphæ which constitute this fungus zone appear as septate filaments, generally very long, more or less branched and interwoven with one another. We have found this disposition of the fungus in material from Bolivia, Brazil, Chili, Abyssinia, Persia, Syria, Spain, Portugal, Sweden, Germany, and many localities in France. In forty seeds of most diverse origin the mycelial zone was lacking from but

<sup>1</sup> Archiv. f. exp. Path. u. Pharm. 30:—. 1892.